

DI
C1
cont.

to a finished configuration the shredding element assumes on the disintegration roll;
hardening at least a portion of the shredding element while it is in the preparative
configuration; and
using the hardened shredding element on a shredding element carrier of the
disintegration roll.

DI

34. A process as in claim 33, wherein the shredding element is preshaped around a preshaping body to be converted into the preparative configuration, the preshaping body having a circumference essentially corresponding to the circumference of the disintegration roll.

35. A process as in claim 34, wherein the shredding element remains on the preshaping body during the hardening of at least a portion of the shredding element.

36. A process as in claim 35, wherein the preshaping body is the shredding element carrier.

37. A process as in claim 33, further comprising the step of grinding a working end of the shredding element which contacts the fibers.

38. A process as in claim 34, wherein the step of hardening the shredding element includes an induction procedure.

39. A process as in claim 38, wherein said induction procedure include use of a high frequency current.

40. A process as in claim 39, wherein the step of hardening of the shredding element includes providing an alternating current to a working area of the shredding element at a frequency of more than 1000 kHz.

41. A process as in claim 40, wherein the alternating current is in a frequency

ranging between 1500 to 2000 kHz.

42. A process as in claim 33, wherein the step of hardening the shredding element is performed in a protective gas.

43. A process as in claim 33, further comprising a step of heat treating the shredding element after hardening to relieve stress in the shredding element.

44. A process as in claim 33, further comprising a step of blasting the shredding element with a particle blast after hardening.

45. A process as in claim 44, wherein the particle of the particle blast uses glass as the particle.

46. A process as in claim 44, further comprising a step of demagnetizing the shredding element.

47. A process as in claim 33, further comprising a step of deburring the shredding element.

48. A process as in claim 47, wherein the shredding element is deburred by a chemical.

49. A process as in claim 33, further comprising a step of coating the shredding element.

50. A process as in claim 49, wherein the shredding element is coated with a nickel-plating.

51. A process as in claim 37, wherein the grinding occurs on teeth points of the shredding element.

52. A process as in claim 51, wherein the teeth points of the shredding element are subject to a grinding in a direction counter to the operational direction of

the teeth points of the shredding element.

53. A process as in claim 52, wherein the shredding element integral to the shredding element carrier is rotated in an opposite direction of rotation of a grinding disk used to grind the shredding element.

54. A process as in claim 52, wherein the shredding element undergoes no pre-hardening procedure before it is shaped.

55. A process as in claim 33, wherein the shredding element carrier is created from a non-hardening material.

56. A process as in claim 55, wherein the shredding element carrier is created from a low carbon steel.

57. A process as in claim 49, wherein the shredding element is plasma coated.

58. A process as in claim 57, wherein the plasma coating includes titanium nitride.

59. A process as in claim 33, wherein the shredding element is a sawtooth wire.

60. A disintegration roll for use in separation of fibers in an open-end apparatus, said disintegration roll comprising:

a shredding element carrier having an outer circumference; and

a shredding element operably mounted to said outer circumference of said shredding element carrier, said shredding element being pre-shaped to conform to said outer circumference of said shredding element carrier and at least partially hardened in this pre-shaped form.

61. A disintegration roll as in claim 60, wherein said shredding element is hardened by an induction procedure.

62. A disintegration roll as in claim 60, wherein the shredding element is coated with a nickel-plating.

63. A disintegration roll as in claim 60, wherein the shredding element undergoes no pre-hardening procedure before it is shaped.

64. A disintegration roll as in claim 60, wherein the shredding element carrier is created from a non-hardening material.

65. A disintegration roll as in claim 64, wherein said shredding element is pre-shaped on the shredding carrier element and hardened on said shredding element carrier.

66. A disintegration roll as in claim 60, wherein the shredding element is plasma coated.

67. A disintegration roll as in claim 66, wherein the plasma coating includes titanium nitride.

68. A disintegration roll as in claim 60, wherein the shredding element is a sawtooth wire.—

REMARKS

The present amendment clarifies an unclear portion of the independent claim 33 and should facilitate prosecution of the application. The new claim more distinctly sets forth and aptly claims the invention.